



# Australian Bureau of Statistics

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### Feature Article - Household Water Use and Effects of the Drought

#### INTRODUCTION

This article presents 2000-2004 data on household water use and conservation practices. The information in this article is based on data obtained by the ABS through direct surveys of water providers (as well as other peak industry bodies such as the Australian Water Association (AWA) and Water Services Association of Australia (WSAA)) and occupants from a sample of dwellings.

Household water use and conservation has been a widely discussed issue over the last four years due to drought conditions in southeast Australia. One of the measurable impacts of drought is a reduction in water storage levels, and as a result water restrictions have been introduced in most capital cities. The 2004 data on domestic water use and conservation practices show the impact of the drought and the water restrictions in many regions of Australia in recent times.

#### HOUSEHOLD WATER USE

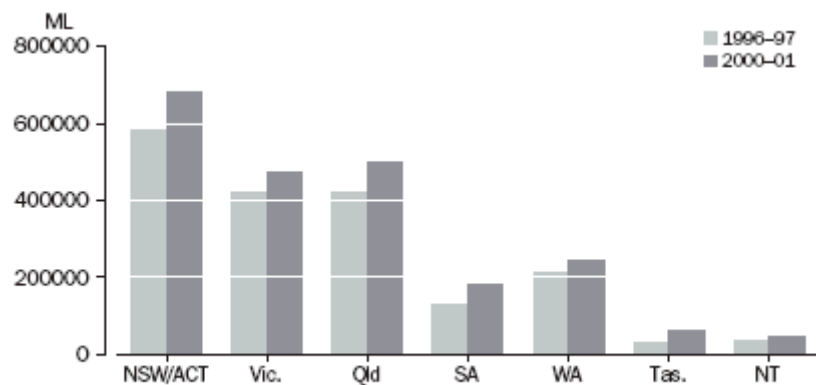
##### Total water use

In 2000-2001, total water use by the household sector was 2.2 million ML. This was 280,000 litres per household and accounted for 8.8% of total water consumption in Australia. This compares with total water use by the household sector of 1.8 million ML in 1996-1997 (an increase of 19%) which accounted for 8.2% of total water consumption. The rise in water consumption could be attributed in part to an increase of population (4.8% nationally from 1996-1997 to 2000-01), as well as to better coverage and reporting within the water account.

Of the total volume used in 2000-2001, New South Wales households used the most water (6.4 million ML), followed by Queensland (5.0 million ML) and Victoria (4.7 million ML). The Australian Capital Territory (0.37 million ML) and Northern Territory (0.45 million ML) households used the least amount of water. These statistics reflect the differences in climate and population proportions of the states.

Despite a visible growth in household water consumption levels up to 2001, due to the drought and water restrictions household mains water consumption has decreased between 2001 and 2004. Unpublished figures from water authorities show in Perth, Western Australia, daily water use per household decreased from 317 litres in 2000-2001 to 279 litres in 2003-2004 (a decrease of 38 litres). A similar change was observed in Adelaide, where mains water use per household fell from 271 litres per day in 2000-2001 to 245 litres per day in 2003-2004, (a decrease of 26 litres). Melbourne's total mains water consumption by households was reduced by almost 40,000 ML between 2000-2001 and 2003-2004 (a fall from 305,953 ML to 267,570 ML) despite population increases. Other capital cities have also all seen a decline in household water consumption.

**GRAPH 1. WATER USE, Households-1996-1997 and 2000-2001**



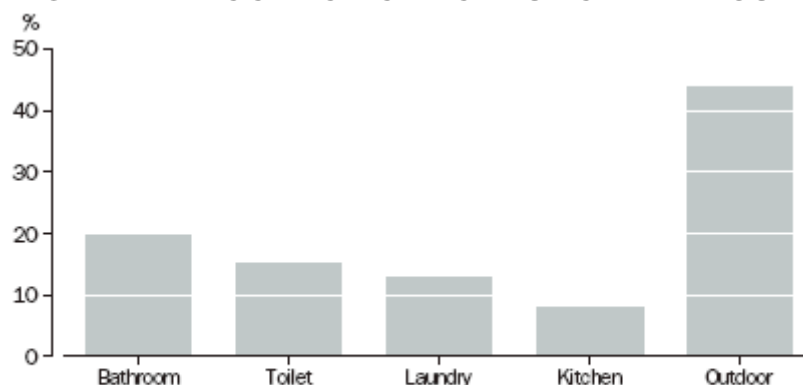
Source: Water Account Australia 2000-01, cat. no. 4610.0.

## Location of use

Graph 2 shows that the majority of household water use in 2000-01 was for outdoor purposes (44%). Households in Queensland, South Australia, Western Australia and the Australian Capital Territory all reported using over 50% of the household water outdoors. In New South Wales 25% of household water was used for outdoor purposes and 35% was used outdoors in Victoria. These differences are partly due to smaller individual block sizes and percentages of households with no outdoor facilities in more densely populated areas of these states, as well as to the climatic differences.

Indoor use, including bathrooms (20%) and toilets (15%) accounted for a significant proportion of household water use in Australia. Nationally, 8% of water used by households (or less than 1% of total water use in Australia) was used in the kitchen.

**GRAPH 2. LOCATION OF DOMESTIC WATER USE**



Source: Water Account Australia 2000-01, cat.no. 4610.0.

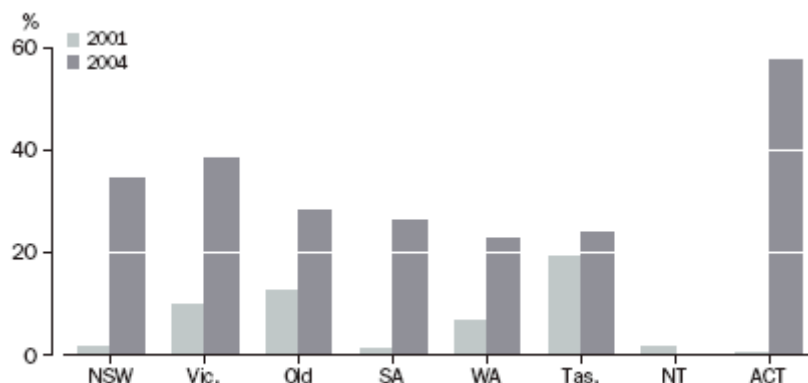
## EFFECTS OF THE DROUGHT

A measurable effect of the drought is the strong reduction in water storage levels, resulting in water restrictions being introduced in capital cities around Australia during 2002-2003. These water restrictions varied from voluntary reductions of water use to mandatory restrictions. Sydney, Melbourne, Perth, Hobart and Canberra all experienced mandatory water restrictions during 2002-2004. The only capital city not affected by water restrictions during 2002-2004 was Darwin. As a result, there was a large increase between 2001 and 2004 in households that nominated supply restrictions as a problem with their mains/town water supply (graph 3) and have begun taking water conservation measures around the home and outdoors.

## PROBLEMS WITH MAINS WATER SUPPLY

The percentage of households experiencing no supply problems has decreased significantly: from 74.4% in 2001 to 56.5% in 2004. This is mainly due to a significant increase in the percentage of households that nominated supply restrictions as a problem with their water supply: from 7% in 2001 to 32% in 2004. Other major problems reported included inadequate or low pressure (a reduction from 10.6% in 2001 to 9.7% in 2004) and supply disruptions (a reduction from 9.0% in 2001 to 8.0% in 2004).

**GRAPH 3. PROBLEMS WITH MAINS WATER SUPPLY RESTRICTIONS**



Source: *Environmental Issues: People's Views and Practices*, Mar 2004, cat. no. 4602.0.

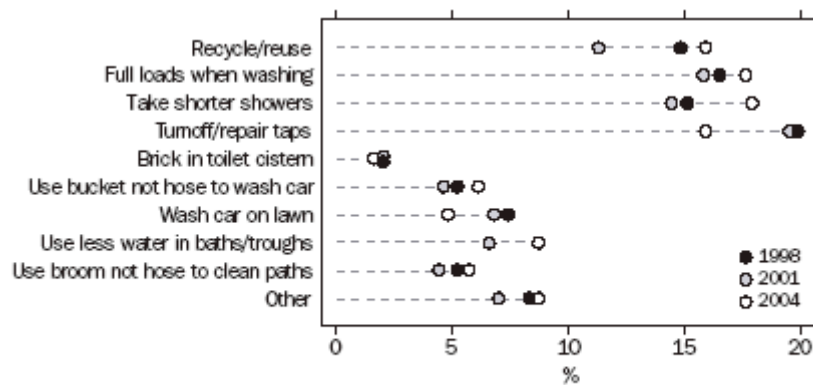
## CONSERVATION

Both inside the home and outdoors, the percentage of the population taking conservation measures has increased. In 2004, more than 90% of Australians reported taking conservation measures in the garden, with the percentage of those taking no water conservation steps at all decreasing to 9% from a steady 11% in 2001 and 1998. Forty six percent reported saving water in and around the dwelling, with the percentage of those taking no conservation steps decreasing to 54% from 56% in 2001.

### CONSERVATION PRACTICES TAKEN IN HOMES

The most commonly reported water conservation measures in the home in 2004 included using full loads when washing dishes and clothes, and taking shorter showers (18% reported doing each of these). These were particularly popular in Victoria, where over one-quarter of households undertook these activities. The use of both reduced flow shower heads and dual flush toilets in Australian households continues to grow. Over 4 in 5 households (82%) had either a dual flush toilet or a reduced flow shower head, up from 73% in 2001. Recycling and/or reusing water was reported by 16% of households, an increase from 11% in 2001. In the Australian Capital Territory, 28% of households recycled or reused water, an increase from 10% in 2001. These were also popular activities in Victoria and Western Australia (21%, increased from 14% in both states). Sixteen percent of households also reported turning off or repairing dripping taps to conserve water (down from 20% in 2001). Other measures employed by less than 10% of households include: washing the car on the lawn; using a bucket to wash the car; using less water in baths, etc.; using a broom to clean paths; and putting a brick in the toilet cistern.

**GRAPH 4. WATER CONSERVATION PRACTICES TAKEN IN HOME**



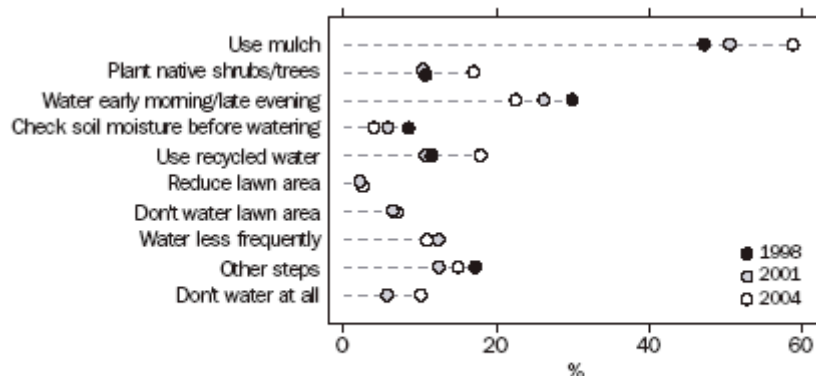
Source: *Environmental Issues: People's Views and Practices, Mar 2004, cat. no. 4602.0.*

## CONSERVATION MEASURES APPLIED IN THE GARDEN

For households, water restrictions impact on the use of water outside the house, primarily in the garden. Overall, more than 90% of households with gardens reported taking measures in the garden to conserve water in 2004. States and territories where households reported an overall increase in measures to conserve water in the garden since 2001 include New South Wales (86% to 90% of households), Victoria (90% to 93%) and South Australia (90% to 93%). Of those households that water their garden, the main source of water was mains water (85%) in 2004, a decrease from 88% in 2001. The measure reported most often by households to conserve water in the garden was using mulch (59%, up from 51% in 2001). The next most popular measure (at 23%) was watering early in the morning. 18% of households even recycled water in the garden, a significant increase from 11% in 2001. 17% of households reported planting low water-use native trees or shrubs.

Other specific measures include watering less frequently but for longer periods (11%), and not watering at all (10%). Significantly more households in New South Wales (7% to 12%), Victoria (6% to 13%) and the ACT (3% to 8%) reported not watering their gardens at all in 2004, compared to 2001. Hand watering of the garden was used more often in 2004 than in previous years. In 2004, 71% of Australian households hand watered their garden, compared with 66% in 2001. Just over three quarters of households in New South Wales, Victoria and the ACT used hand watering. (This is likely to be the direct response to the various water restrictions in place across Australia, which severely restrict the use of sprinkler systems on domestic gardens, including a complete ban in some regions).

**GRAPH 5. WATER CONSERVATION MEASURES APPLIED IN GARDEN**



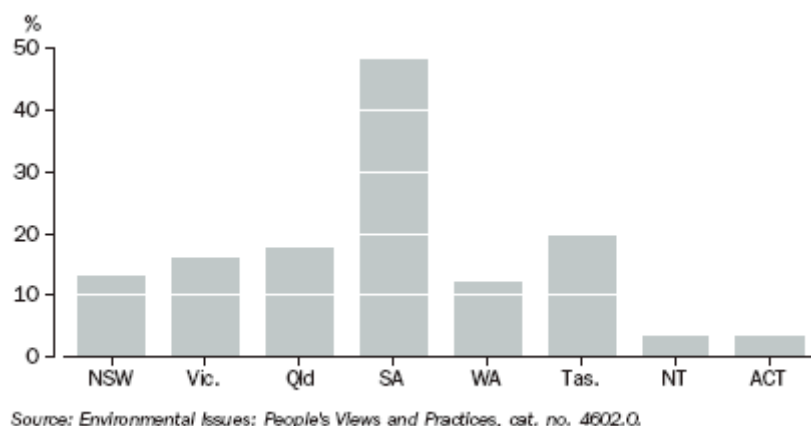
Source: *Environmental Issues: People's Views and Practices, Mar 2004, cat. no. 4602.0.*

## RAINWATER TANK INSTALLATION

Seventeen per cent of Australian households sourced water from a rainwater tank in 2004, a slight increase from 2001 (16%). The benefits of rain-water tanks include aiding self-sufficiency, providing a back-up supply in case of water restrictions, peak supply shortages or water quality problems. Also, most states and territories introduced rainwater tank rebates from 2002. These reasons have been responsible for a 9% increase since 2001 in the percentage of households considering installing a rain-water tank (from 25% in 2001 to 34% in 2004). However cost, lack of room and insufficient rainfall are the main reasons that prevent rainwater tank installation and account for lack of a significant change in rainwater tank usage.

Households in South Australia had the highest proportion of rainwater tanks (48%) in 2004. This could be explained by the highest dissatisfaction rate with the quality of mains water (36% compared with the national average of 24%). The lowest proportion of households with rainwater tanks was recorded in the ACT (3%), where the satisfaction with the quality of mains water is at 87%, compared with the average of 70%.

**GRAPH 6. PROPORTION OF HOUSEHOLDS WITH RAINWATER TANKS, March 2004**



## GOVERNMENT INVOLVEMENT

Continuously decreasing water storage levels have resulted in State Governments introducing water saving schemes to promote water conservation. Victorian and South Australian State Governments, as well as several New South Wales local councils have proposed permanent water conservation measures. These include restrictions on times when automatic sprinklers can be used, compulsory installations of rain sensors in automatic watering systems, compulsory fitting of hoses with trigger nozzles, and prohibitions of water use for driveway and path cleaning purposes. The Local Government Association of NSW has introduced a BASIX scheme which requires all new residential dwellings in New South Wales (from 2005 onwards) to achieve a 40% reduction in water consumption through a variety of compulsory water saving features inside and outside the dwelling. Tasmania, Victoria, Western Australia and parts of South Australia and New South Wales have offered rebates on water saving measures and appliances from 2002 and 2003. These include replacements of single flush with dual flush toilets, installation of rainwater storage for garden watering and toilet flushing, water efficient shower heads and washing machines, swimming pool covers and rainwater tanks.

## FURTHER INFORMATION

Water Account Australia 2000-2001 (cat. no. 4610.0) and Environmental Issues: People's Views and Practices, March 2004 (cat no. 4602.0) provide further information on household water use, including the data tables from which the information for this article was gathered.

Information on the water account methodology can be found in the Explanatory notes, Water Account Australia, 2000-2001, (cat. no. 4610.0).

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